

ABSTRACT

An object of the present invention is to provide a Group III nitride semiconductor multilayer structure 5 having a smooth surface and exhibiting excellent crystallinity, which multilayer structure employs a low-cost substrate that can be easily processed. Another object is to provide a Group III nitride semiconductor 10 light-emitting device comprising the multilayer structure.

The inventive Group III nitride semiconductor multilayer structure comprises a substrate; an $\text{Al}_x\text{Ga}_{1-x}\text{N}$ ($0 \leq x \leq 1$) buffer layer which is provided on the substrate and has a columnar or island-like crystal structure; and 15 an $\text{Al}_x\text{In}_y\text{Ga}_{1-x-y}\text{N}$ ($0 \leq x \leq 1$, $0 \leq y \leq 1$, $0 \leq x + y \leq 1$) single-crystal layer provided on the buffer layer, wherein the substrate has, on its surface, non-periodically distributed grooves having an average depth of 0.01 to 5 μm .